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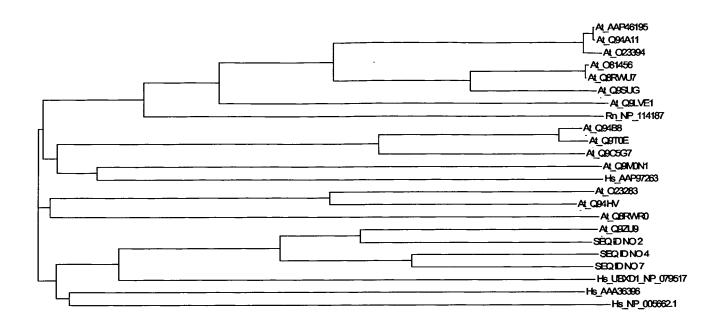


FIGURE 1 A

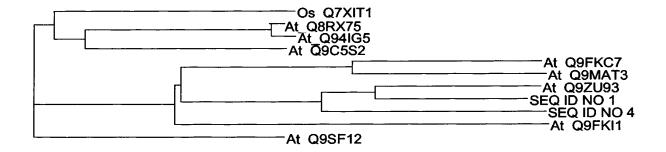


FIGURE 1B

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Consensus terms YJE8_YEAST CONSENSUS/80% CONSENSUS/65% CONSENSUS/50%	for the UBX domain KGFLAQ-NYCTLQLKLPNGYTISNTFP-PQTKLHKVRMWLDYNCYDDGTP s.ttsplplRhssGpph.ppFspp.lptlhthls.sss stpptt.stsplQlRhssGpphsppFs.uppslpplhphlts.ssss Ppppss.sps+LOlRhPDGpplsccFs.us-sLcplapaVsptpssusss
YJE8_YEAST CONSENSUS/80% CONSENSUS/65% CONSENSUS/50%	YLFHRNIPRVTLTRNDELKSLQEL-DLLPRSTLILEPapl.pshPch.hspthph.pthhspsslllFpL.pshP+c.hspsppl.ch.tlhPsusllltFpLpssaPR+slocsDKoLp-l.sLhPsuoLlLct
Consensus terms AAF74723 CONSENSUS/80% CONSENSUS/65% CONSENSUS/50%	for the PUG domain EASKLLLTYADNILRNPSDEKYRSIRIGNTAFSTRLLPVRGAVECLFEMGFEEG tslt.LLphhcNhhpp.ps.hpphlh.h.tsh.htf.ph pslpsLL+hl+Nhhcc.pEstthpctltpl.sshphhhthtFscl.h solccLLRhlRNlh+HhcEttsppl+EplGslP-uhcpaFsssFPcLhh
AAF74723 CONSENSUS/80% CONSENSUS/65% CONSENSUS/50%	ETHLIFPKphh.h.pphathhpcsYplss

FIGURE 2 A

UBX domain present in SEQ ID NO 2

339 KAARKKYTKSIIRVQFPDGALLQGVFLPSEPTSALYEFVSAALKEPSLEFELLHPVLVKKRVIPHF PAAGERAVTVEEEDLVPAALLKFK 428

PUG domain present in SEQ ID NO 2:

173 GSVEVVIKLLKNIVKEPENAKFRKIRMGNPKIKGAIGDVVGGVELLEFVGFELKEEGGEIWAVMDV PS 240

UBX domain present in Q9ZU93

345 KAARKRYKRSMIRVQFPDGVVLQGVFAPWEPTFALYEFVSSALKEPSLQFELLDPVLVKRRVIPHT PAPGQKPITLEDEELVPSALIRFRP 435

PUG domain present in Q9ZU93

181 SSIDVLLRLFKNIVKEPENAKFRKVRMSNAKIKEAIGDVAGGVELLELVGFELKEENDEIWAVMDV PS 248

FIGURE 2 B

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Q9ZU93	1	MDDVKDKLKGFMKKVNLSSSSGKFKGQGRVLGSSSSSSAPPVNPIQNRFN	50
SEQ_ID_NO_2	1	MGDMKDKVKGFMKKVT-SSSSGKFKGQGRVLGGSSSSGPSNHV-NNFS	46
Q9ZU93	51	SSQAPNPTPRPKPNPNPLPEKPLSSSDQKISGSTRNPDHD	90
SEQ_ID_NO_2	47	. . :. : : : SHPLNTRQDQQPSYTKTSPQKP-SNSDQRIENICEIQFNKSES	88
Q9ZU93	91	PVRAPQDGFDPYGAFITSSNRSQNGYSL-SMFECPICKNPFTSEEEVSVH : : ::. ::. .	139
SEQ_ID_NO_2	89	KDGFDPFGELVTSGKRNPKGYSLTNVFECPVCGSGFVSEEEVSTH	133
Q9ZU93	140	VESCLGDTN-GDESSFEKDNNDNDKSEMEKLVVVYLSGKPSESSIDV :: : . . . :	185
SEQ_ID_NO_2	134	IDSCLSSEVSSNLGVESKVEVKSELETCVSAYVSGKPSEGSVEV	177
Q9ZU93	186	LLRLFKNIVKEPENAKFRKVRMSNAKIKEAIGDVAGGVELLELVGFELKE	235
SEQ_ID_NO_2	178	VIKLLKNIVKEPENAKFRKIRMGNPKIKGAIGDVVGGVELLEFVGFELKE	227
Q9ZU93	236	ENDEIWAVMDVPSEEQSILINKVVGYLEKRKTESSGSSAQVMEPVAPK	283
SEQ_ID_NO_2	228	EGGE I WAVMDVPS EEQLVMLKNVVSLLEPKKVEELASLSQVKASEPVEPK	277
Q9ZU93	284	KIDREIRVFFSVSENVASRIEVPDSFYSLSADEIKREADLRRKKIAESQL	333
SEQ_ID_NO_2	278	KIDRQIRVFFSVPESVAAKIELPDSFFNLSREELRREAEMRKKKLEDSKL	327
Q9ZU93	334	LIPRSYKEKQAKAARKRYKRSMIRVQFPDGVVLQGVFAPWEPTFALYEFV	383
SEQ_ID_NO_2	328	LIPKSYREKQAKAARKKYTKSIIRVQFPDGALLQGVFLPSEPTSALYEFV	377
Q9ZU93	384	SSALKEPSLQFELLDPVLVKRRVIPHTPAPGQKPITLEDEELVPSALIRF	433
SEQ_ID_NO_2	378	SAALKEPSLEFELLHPVLVKKRVIPHFPAAGERAVTVEEEDLVPAALLKF	427
Q9ZU93	434	RPIETDSLVFTGLRNELLEISEPLS 458	
SEQ ID NO 2	428	KPIETDSVVFTGLCNELLEISEPLETGSVASS 459	

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SEQ_ID_NO2	1	MGDMKDKVKGFMKKVTSSSSGKFKGQGRVLGGSSSSGPSNHVNNFSS	47
SEQ_ID_NO4_C	1	mmkdkmkefmkkvtssgsgtpssfkgtshvlgsgpspsss	40
SEQ_ID_NO2	48	HPLNTRQDQQPSYTKTSPQKPSNSDQRIENICEIQFNKSESKDGFD	93
SEQ_ID_NO4_C	41	hpaarssnpspnlrpapkrtspptpptlttdlts	74
SEQ_ID_NO2	94	PFGELVTSGKRNPKGYSLTNVFECPVCGSGFVSEEEVSTHIDSCLSS	140
SEQ_ID_NO4_C	7 5	-ftplvcyssrrpdangtaCavatvacpscgdafpselavsehldgclas	123
SEQ_ID_NO2	141	EVSSNLGVESKVEVKSELETCVSAYVSGKPSEGSVEVVIKLLKNIVKE : .! :: .::	188
SEQ_ID_NO4_C	124	aggararaaaylaadppppa <u>asvevvkrllgnllre</u>	159
SEQ_ID_NO2	189	PENAKFRKIRMGNPKIKGAIGDVVGGVELLEFVGFELKEEGGEIWAVMD-	237
SEQ_ID_NO4_C	160	pgndkfrrvrlgnprikealadrdggvelleavgftvgdeggepfavmde	209
SEQ_ID_NO2	238	VPSEEQLVMLKNVVSLLEPKKVEELASLSQVKASEPVE-PKKI	279
SEQ_ID_NO4_C	210	vpsdprlngirravlllegahpsappvkaeaeakescsnvsdvqegakti	259
SEQ_ID_NO2	280	DRQIRVFFSVPESVAAKIELPDSFFNLSREELRREAEMRKKKLEDSKLLI	329
SEQ_ID_NO4_C	260	drqirvfvsvpgssmaqndvpdsfyklsgeeirneakmrrerleqsrlli	309
SEQ_ID_NO2	330	PKSYREKQAKAARKKYTKSIIRVQFPDGALLQGVFLPSEPTSALYEFVSA	379
SEQ_ID_NO4_C	310	pksykekqalaarqkykqavirvqfpdrmilqgiflpgeatsslyefvts	359
SEQ_ID_NO2	380	ALKEPSLEFELLHPVLVKKRVIPHFPAAGERAVTVEEEDLVPAALLKFKP	429
SEQ_ID_NO4_C	360	alkqsglefelispaipkprvvphfpnpgerartlqeeelvpsallkfip	409
SEQ_ID_NO2	430	IETDSVVFTGLCNELLEISEPLETGSVASS 459	
SEQ_ID_NO4_C	410	ketdsmvftglldellmaseplpaasq 436	

FIGURE 2 D

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SEQ_ID_NO_4	1	mmkdkmkefmkkvtssgsgtpssfkgtshvlgsgpspssshpaarssn	48
SEQ_ID_NO_7	1	: :. : . .:. :	45
SEQ_ID_NO_4	49	<pre>pspnlrpapkrtspptpptlttdltsftplvcyssrrpdangtaCava : : : :: : </pre>	96
SEQ_ID_NO_7	46	PTPSRPAAPRREAAASARPPSSGFAPYSPLISTSSRRTDPPAGAGAGEDD	95
SEQ_ID_NO_4	97	tvacpscgdafpselavsehldgclasaggararaaaylaadppppaasv	146
SEQ_ID_NO_7	96	AVACPSCAEPFPSELAVSDHLDGCLAAAGGARPRAAAYLAGDPPASAV	143
SEQ_ID_NO_4	147	<pre>evvkrllgnllrepgndkfrrvrlgnprikealadrdggvelleavgftv : </pre>	196
SEQ_ID_NO_7	144	EVVKRLLGNLLSDPRNDKYRKVRLGNPRIKEALADREGGVDLLEAVGFRV	193
SEQ_ID_NO_4	197	<pre>gdeggepfavmdevpsdprlngirravlllegahpsappvkaeaeakesc . . : . : </pre>	246
SEQ_ID_NO_7	194	ADEGGELFALMDEVPGDARLGGIRQAVLLLERARPSTPP-QTQADAKETC	242
SEQ_ID_NO_4	247	<pre>sn-vsdvqegaktidrqirvfvsvpgssmaqndvpdsfyklsgeeirnea . :. .: . . : : : </pre>	295
SEQ_ID_NO_7	243	PNGVSEEQGIKKPVDRQIRVFFSVAASSVAENDLPDSFYSLSNEEIRNEA	292
SEQ_ID_NO_4	296	kmrrerleqsrllipksykekq alaarqkykqavirvqfpdrmilqgifl	345
SEQ_ID_NO_7	293	KMRRERLEQSRLLIPKSYKEKQ ALAARQKYKQALIRIQFPDGVILQGVFL	342
SEQ_ID_NO_4	346	pgeatsslyefvtsalkqsglefelispaipkprvvphfpnpgerartlq	395
SEQ_ID_NO_7	343	PAEPISSLYEFVASSLKQPSLEFDLICPAGPRTRVIPPFPKPGEQARTLR	392
SEQ_ID_NO_4	396	eeelvpsallkfi pketdsmvftglldellmaseplpaasq 436: : . . . :	
SEQ ID NO 7	393	DEDLVPSARLTFKPKETDSVVFTGLLDELLETSEPFTSASS 433	

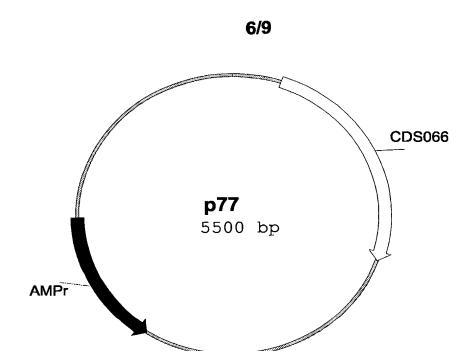


FIGURE 3

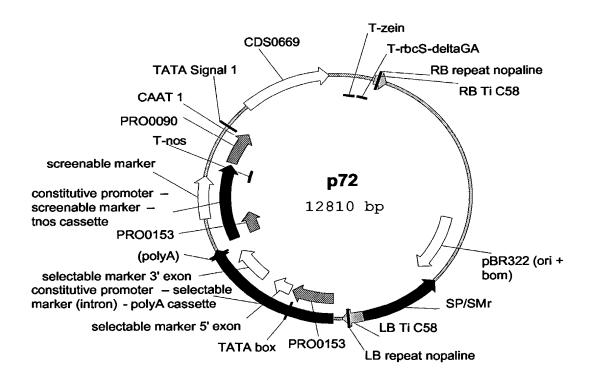


FIGURE 4

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SEQ ID NO 1: GRUBX coding sequence

atgggtgacatgaaggataaagtcaaagggttcatgaaaaaagtcacatcttcttcttcaggtaagttta aaggccaaggtagggttttgggttggttcatcttcttcaggaccctcaaatcatgtcaataatttttcatc acatcccctaaatacaaggcaagatcaacaaccttcatatacaaaaacttcgcctcaaaaaccaagtaat tctgatcaaagaattgagaatatatgtgaaattcagttcaacaaaagtgaatcaaaggatggttttgatc catttggtgaattagtcacttctgggaagagaaacccaaaagggtattcacttactaatgtgtttgaatg ccctgtctgtggtagtggttttgtttctgaagaagaggtgtcaactcatattgatagctgtttaagttct gaagtgtcttctaatttgggagttgaaagtaaagttgaagttaaaagtgaattggaaacatgtgttagtg catatgtttcagggaagccctcagaagggtcagttgaagtggtcattaagttgttaaagaatattgtgaa ggaaccagagaatgccaagtttaggaaaataaggatggggaatccaaaaataaaaggtgctataggtgat gttgtaggaggagtggagctattggaatttgttggatttgagttgaaagaagaaggtggggaaatttggg ctgtgatggatgttccttctgaagaacaacttgttatgcttaagaatgtagtttcactcttggaaccgaa gaaggttgaagagttggcgtccttatcccaagttaaggcgagtgaaccagttgagccgaagaagattgat agacagattcgagtgttcttttctgttcccgagagcgtagcagcaaaaattgagctacctgattccttct cgtgtacagtttccagatggagcattgcttcaaggtgtctttctaccttcggagccaactagtgctcttt atgagtttgtgagcgcagcgttaaaggaaccaagcttagagttcgaattgttacatccggtgcttgttaa aaagcgggtgattccccattttccagctgctggggagagggctgtaacagttgaagaggaggatttggtt cctgcagctctactcaaatttaaacctatcgaaacagattctgttgtttttactggtctttgtaatgagc ttcttgaaattagcgagcccctcgagaccggatcagttgcttcctcgtaa

SEQ ID NO 2: GRUBX, deduced protein sequence

MGDMKDKVKGFMKKVTSSSSGKFKGQGRVLGGSSSSGPSNHVNNFSSHPLNTRQDQQPSYTKTSPQKPSN SDQRIENICEIQFNKSESKDGFDPFGELVTSGKRNPKGYSLTNVFECPVCGSGFVSEEEVSTHIDSCLSS EVSSNLGVESKVEVKSELETCVSAYVSGKPSEGSVEVVIKLLKNIVKEPENAKFRKIRMGNPKIKGAIGD VVGGVELLEFVGFELKEEGGEIWAVMDVPSEEQLVMLKNVVSLLEPKKVEELASLSQVKASEPVEPKKID RQIRVFFSVPESVAAKIELPDSFFNLSREELRREAEMRKKKLEDSKLLIPKSYREKQAKAARKKYTKSII RVQFPDGALLQGVFLPSEPTSALYEFVSAALKEPSLEFELLHPVLVKKRVIPHFPAAGERAVTVEEEDLV PAALLKFKPIETDSVVFTGLCNELLEISEPLETGSVASS

SEQ ID NO 3: GRUBX orthologue from sugarcane

atgatgaaggacaagatgaaggagttcatgaagaaggtcacctcctccgggtccgggaccccctcctcct tcaagggcacctcccacgtcctcggctccggccctccccctcctcctcccaccccgctgcccgctcctc aaaccctagcccaaacctcaggcccgctcctaagcggacctcgccacctaccccgcccactttaaccacc gatttgacctccttcacgccctcgtctgctactcctcccgccgccccgacgcgaacggcaccgcgnnng ccgcccgcggcctccgtagaggtggtcaaacgcctgctgggcaacctgctccgggagcccggcaacgata agttcaggcgggtgagattgggtaacccgcggatcaaggaggccctggcagacagggatggcggggtgga gctcctggaggccgtcggcttcacagttggggatgaggcgggggagcccttcgccgtgatggacgaagtg cctagcgaccctaggctcaacgggatcaggaggccgtcctcctgctcgagggggcacacccctctgcgc ctccagtgaaggcggaggctgaggccaaggagagctgcagcaatgtgtctgacgtgcaggagggtgctaa gactattgatcggcagattcgggtatttgtctctgttcctgggagttctatggcacaaaatgatgtacca gattctttttacaagcttagtggtgaggagataaggaatgaagcaaagatgaggagggaaaggttagaac aatctcqattqctqataccaaagtcttacaaggagaaacaggcattggctgctcgacagaagtataaaca agcagt cattcg agttcagtttccagatag aatgattcttcagggcatattcctaccaggag aggccactagttcactgtatgagttcgtcacatctgctctgaagcaatcaggtttggaattcgaacttatctctccagggagctggtcccatctgcgctcctcaagttcattcccaaggagactgattccatggttttcaccggtttg cttgatgagcttctcatggccagtgagccgcttcctgctgcatcacaatga

FIGURE 5

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SEQ ID NO 4: sugarcane GRUBX orthologue, deduced protein sequence
MMKDKMKEFMKKVTSSGSGTPSSFKGTSHVLGSGPSPSSSHPAARSSNPSPNLRPAPKRTSPPTPPTLTT
DLTSFTPLVCYSSRRPDANGTAXAVATVACPSCGDAFPSELAVSEHLDGCLASAGGARARAAAYLAADPP
PPAASVEVVKRLLGNLLREPGNDKFRRVRLGNPRIKEALADRDGGVELLEAVGFTVGDEGGEPFAVMDEV
PSDPRLNGIRRAVLLLEGAHPSAPPVKAEAEAKESCSNVSDVQEGAKTIDRQIRVFVSVPGSSMAQNDVP
DSFYKLSGEEIRNEAKMRRERLEQSRLLIPKSYKEKQALAARQKYKQAVIRVQFPDRMILQGIFLPGEAT
SSLYEFVTSALKQSGLEFELISPAIPKPRVVPHFPNPGERARTLQEEELVPSALLKFIPKETDSMVFTGL
LDELLMASEPLPAASQ

SEQ ID NO 5: expression cassette comprising GRUBX (1011-2390) operably linked to the prolamine promoter (1-654) and the T-Zein + T-Rubisco deltaG terminator (2615-2808 and 2852-3048):

cttctacatcggcttaggtgtagcaacacgactttattattattattattattattattattatttaca aaaatataaaatagatcagtccctcaccacaagtagagcaagttggtgagttattgtaaagttctacaaa catatgacatactataattttgtttttattattgaaattatataattcaaagagaataaatccacatagc atcatgtatatatgatagccacaaagttactttgatgatgatatcaaagaacatttttaggtgcacctaa cagaatatccaaataatatgactcacttagatcataatagagcatcaagtaaaactaacactctaaagca accgatgggaaagcatctataaatagacaagcacaatgaaaatcctcatcatccttcaccacaattcaaa tattatagttgaagcatagtagtaatttaaatcaactagggatatcacaagtttgtacaaaaaagcaggc ctccacttccaatttctcattgcttcttcttcccatttccacctccaaagccatccttccagaaaacctt gttccttacatttcttagccccaaaaaagattcccatctcaattccacaaaaaaacacaaggagatctaa agattttggtgagagggtgttattgaaaaaaaatgggtgacatgaaggataaagtcaaagggttcatgaaaa aagtcacatcttcttcttcaggtaagtttaaaggccaaggtagggttttgggttgttcatcttcttcagg accctcaaatcatgtcaataatttttcatcacatcccctaaatacaaggcaagatcaacaaccttcatat acaaaaacttcgcctcaaaaaccaagtaattctgatcaaagaattgagaatatatgtgaaattcagttca acaaaagtgaatcaaaggatggttttgatccatttggtgaattagtcacttctgggaagagaaacccaaa ${\tt tcaactcatattgatagctgtttaagttctgaagtgtcttctaatttgggagttgaaagtaaagttgaag}$ ttaaaagtgaattggaaacatgtgttagtgcatatgtttcagggaagccctcagaagggtcagttgaagt ggtcattaagttgttaaagaatattgtgaaggaaccagagaatgccaagtttaggaaaataaggatgggg aatccaaaaataaaaggtgctataggtgatgttgtaggaggagtggagctattggaatttgttggatttg taagaatgtagtttcactcttggaaccgaagaaggttgaagagttggcgtccttatcccaagttaaggcg agtgaaccagttgagccgaagaagattgatagacagattcgagtgttcttttctgttcccgagagcgtag cagcaaaaattgagctacctgattccttctttaacctctcacgtgaggaattgagaagagaagcagagat gaggaagaagaaattagaagattccaaattattgattcctaaatcttatcgggaaaagcaggcaaaagct gcaagaagaagtacacaaaatccattatccgtgtacagtttccagatggagcattgcttcaaggtgtct $\verb|ttctaccttcggagccaactagtgctctttatgagtttgtgagcgcagcgttaaaggaaccaagcttaga|$ gttcgaattgttacatccggtgcttgttaaaaagcgggtgattccccattttccagctgctggggagagg gctgtaacagttgaagaggaggatttggttcctgcagctctactcaaatttaaacctatcgaaacagatt ctgttgtttttactggtctttgtaatgagcttcttgaaattagcgagcccctcgagaccggatcagttgc $\verb|ttcctcg| \textbf{taa} \textbf{g} \textbf{ctctaaattacatcagactttgaattcttctgagtgttggaaaccttataaaactctct}|$ gcgccgggaatgctgcggccgctctagagtatccctcgaggggcccaagcttacgcgtacccagctttct tgtacaaagtggtgatatcacaagcccgggcggtcttctagggataacagggtaattatatccctctaga tcacaagcccgggcggtcttctacgatgattgagtaataatgtgtcacgcatcaccatgggtggcagtgt

FIGURE 5 (continued)

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SEQ ID NO 6: Oryza sativa GRUBX orthologue, DNA sequence

atgatgaaggaaaagatgaaggatctcatgaggaaggtcacctcctcctcctcctcctcctcgtcgtcct cctccttcaagggcaccgcccacgtcctcggctccggccccgacccctcctcccgcccctccaaccctac ccctagtcgccccgctgccccccggcgagaggccgccctccgcgaggccgccctcctccggcttcgcc acgacgccgtcgcgtgccccagctgcgccgagccgttcccctccgagctggcggtgtcggaccacctcga cggctgcctcgcggcggcggggggagcccgccccgcgcggccgcctacctggccggcgacccccccgcg tccgccgtggaggtggtgaagaggctgctcgggaacctgctctccgacccccggaacgacaagtacagga ggccgtggggttcagggtcgccgacgagggcggggagctcttcgccctcatggacgaggtgcccggggac gcgaggctcggcggcatcaggcaggccgtgctcctgctcgagagggcccggccatcgacgccgcaga cacaggcagatgccaaagagacttgcccgaatggagttagcgaagagcaggggattaagaagccggttga tcgtcagattcgggtgttcttctctgttgctgcaagttctgttgcagaaaatgatctaccagattctttc tgttgattccaaagtcatataaggagaagcaggcactggctgcccgacagaagtataaacaagctctgat tatgagtttgtcgcatcttctttgaagcagccaagtttggaattcgatcttatctgtccagcgggtccta cccttctgctcggctcaccttcaagcccaaagagactgattcggttgtgttcactggtctgttggacgag cttcttgagaccagtgagccgttcacatctgcatcctcatga

SEQ ID NO 7: Oryza sativa GRUBX orthologue, deduced protein sequence MMKEKMKDLMRKVTSSSSSSSSSSSFKGTAHVLGSGPDPSSRPSNPTPSRPAAPREAAASARPPSSGFA PYSPLISTSSRRTDPPAGAGAGEDDAVACPSCAEPFPSELAVSDHLDGCLAAAGGARPRAAAYLAGDPPA SAVEVVKRLLGNLLSDPRNDKYRKVRLGNPRIKEALADREGGVDLLEAVGFRVADEGGELFALMDEVPGD ARLGGIRQAVLLLERARPSTPPQTQADAKETCPNGVSEEQGIKKPVDRQIRVFFSVAASSVAENDLPDSF YSLSNEEIRNEAKMRRERLEQSRLLIPKSYKEKQALAARQKYKQALIRIQFPDGVILQGVFLPAEPISSL YEFVASSLKQPSLEFDLICPAGPRTRVIPPFPKPGEQARTLRDEDLVPSARLTFKPKETDSVVFTGLLDE LLETSEPFTSASS

FIGURE 5 (continued)